

**WHAT IS CLAIMED IS:**

- 1           1.    A vehicle door handle device comprising:
  - 2               a frame secured to an inside of an outer panel of a vehicle door and having
  - 3               a supporting portion and insertion holes;
  - 4               a link rotatably mounted to the frame and urged by an urging force of an
  - 5               elastic member in one rotational direction;
  - 6               a grip-type outer handle mounted from outside the outer panel and
  - 7               operatively associated with the link to operate the link so as to rotate against the
  - 8               urging force of the elastic member;
  - 9               the link being provided with axle portions each having a two faced portion
  - 10              and a first engaging portion;
  - 11              the frame being provided with slots for inserting each of the two faced
  - 12              portions;
  - 13              the frame being provided with supporting holes for rotatably supporting the
  - 14              axle portions; and
  - 15              the frame being provided with a second engaging portion which engages
  - 16              the first engaging portion for holding the link in a preliminary holding position.
- 1           2.    The vehicle door handle device as set forth in Claim 1, wherein the
  - 2               axle portions and the first engaging portion are integrally formed on the link so
  - 3               that the link, the axle portions and the first engaging portion are unitarily formed
  - 4               as one piece.

1           3.    The vehicle door handle device as set forth in Claim 2, wherein the  
2   first engaging portion deforms the second engaging portion when the link is  
3   rotated a predetermined amount against the urging force of the elastic member.

1           4.    The vehicle door handle device as set forth in Claim 3, wherein the  
2   axle portions are first axle portions, the link including second axle portions each  
3   coaxially arranged with one of the first axle portions, the second axle portions  
4   having a circular cross-sectional shape, the second axle portions being integrally  
5   formed with the link so that the link and the second axle portions are unitarily  
6   formed as one piece, the frame including second slots for inserting the second axle  
7   portions and second supporting holes for rotatably supporting the second axle  
8   portions.

1           5.    The vehicle door handle device as set forth in Claim 1, wherein the  
2   outer handle is provided at its one end with an engaging portion inserted through  
3   one of the insertion hole and engaged with the supporting portion so as to be able  
4   to swing, an opposite end of the frame being provided with an insertion projection  
5   inserted through an insertion hole different from the one insertion hole , the  
6   insertion projection having an engaging recessed portion engaged with an input  
7   portion of the link.

1           6.    The vehicle door handle device as set forth in Claim 1, wherein the  
2   first engaging portion deforms the second engaging portion when the link is  
3   rotated a predetermined amount against the urging force of the elastic member.

1           7.    The vehicle door handle device as set forth in Claim 1, wherein the  
2   axle portions are first axle portions, the link including second axle portions each  
3   coaxially arranged with one of the first axle portions, the second axle portions  
4   having a circular cross-sectional shape, the second axle portions being integrally  
5   formed with the link so that the link and the second axle portions are unitarily  
6   formed as one piece, the frame including second slots for inserting the second axle  
7   portions and second supporting holes for rotatably supporting the second axle  
8   portions.

1           8.    The vehicle door handle device as set forth in Claim 1, wherein the  
2   link includes a mounting portion, the elastic member being mounted on the  
3   mounting portion.

1           9.    A vehicle door handle device comprising:  
2           a frame secured to an inside of an outer panel of a vehicle door, the frame  
3   having insertion holes, the frame including a pair of slots, a pair of supporting  
4   holes, and an engaging portion;

5 a link rotatably mounted on the frame and having an engaging portion, the  
6 link including a pair of axle portions each having at least one flat surface, each  
7 axle portion being insertable into one of the slots in the link and rotatably  
8 supported by one of the supporting holes;

9 a spring connected to the link and applying a rotational urging force to the  
10 link in one rotational direction;

11 an outer handle having an insertion portion passing through the outer panel  
12 and into one of the insertion holes, the outer handle having an engaging portion  
13 passing through the outer panel and into another of the insertion holes, the  
14 insertion portion of the outer handle being in engagement with a portion of the  
15 link to rotate the link against the urging force of the elastic member upon  
16 operation of the outer handle;

17 the engaging portion of the frame engaging the engaging portion of the link  
18 to hold the link in a preliminary holding position.

1 10. The vehicle door handle device as set forth in Claim 9, wherein the  
2 axle portions and the engaging portion of the link are integrally formed on the link  
3 so that the link, the axle portions and the engaging portion of the link are unitarily  
4 formed as one piece.

1 11. The vehicle door handle device as set forth in Claim 9, wherein the  
2 engaging portion of the link deforms the engaging portion of the frame when the

3 link is rotated a predetermined amount against the urging force of the elastic  
4 member.

1 12. The vehicle door handle device as set forth in Claim 9, wherein the  
2 axle portions are first axle portions, the slots are first slots and the supporting  
3 holes are first supporting holes, the link including second axle portions each  
4 coaxially arranged with one of the first axle portions, the second axle portions  
5 having a circular cross-sectional shape, the second axle portions being integrally  
6 formed with the link so that the link and the second axle portions are unitarily  
7 formed as one piece, the frame including second slots for inserting the second axle  
8 portions and second supporting holes for rotatably supporting the second axle  
9 portions.

1 13. The vehicle door handle device as set forth in Claim 9, wherein the  
2 engagement of the insertion portion of the outer handle with a portion of the link  
3 includes the insertion projection having an engaging recessed portion engaged with  
4 an input portion of the link.

1 14. The vehicle door handle device as set forth in Claim 9, wherein the  
2 link includes a mounting portion on which is mounted the spring.

1           15. A vehicle door handle device comprising:  
2           a frame secured to an inside of an outer panel of a vehicle door, the frame  
3           having a first pair of supporting holes and a second pair of supporting holes;  
4           a link rotatably mounted on the frame by way of a pair of first axle  
5           portions and a pair of second axle portions, the first axle portions and the second  
6           axle portions having different cross-sectional shapes, each of the first axle portions  
7           being rotatably supported in one of the first supporting holes and each of the  
8           second axle portions being rotatably supported in one of the second supporting  
9           holes;  
10          a spring connected to the link and applying a rotational urging force to the  
11          link in one rotational direction;  
12          an outer handle mounted from outside the outer panel of the vehicle, a  
13          portion of the outer handle engaging a portion of the link to rotate the link against  
14          the urging force of the elastic member upon operation of the outer handle; and  
15          a portion of the frame engaging a portion of the link to hold the link in a  
16          preliminary holding position.

1           16. The vehicle door handle device as set forth in Claim 15, wherein the  
2           link includes a mounting portion on which is mounted the spring.

1           17. The vehicle door handle device as set forth in Claim 15, wherein  
2           each of the second axle portions is coaxial with one of the first axle portions.

